LINCOLN
APPLIED GEOLOGY, INC.
Environmental Consultants

August 17, 2000

Mr. Jon Traver
PO Box 488
N. Bennington, VT 05257

Re: Paulin Gulf, North Bennington, VT - (Site #87-0042), Site Status Update.

Dear Mr. Traver:

Lincoln Applied Geology, Inc. (LAG) has performed ground water monitoring and sampling at the Paulin Gulf site in North Bennington, Vermont in accordance with the Vermont Department of Environmental Conservation (VDEC), Sites Management Section (SMS) approved 2000 site schedule. This most recent full site monitoring and ground water sampling event was performed on June 9, 2000. The air sparging system was operated between April 10th and May 18th during the past seven month period. Enclosed for your information and use in reviewing this site status update are the following attachments:

Table 1,	Ground Water Elevations;
Table 2,	PID Monitoring Results;
Table 3,	Ground Water Quality Results;
Table 4,	Remedial System Operating Vacuums and Pressures;
Table 5,	Remedial System Air Flows;
Table 6,	Dissolved Oxygen and Temperature Readings;
Figure 1,	Ground Water Contour Map for June 9, 2000;
Figure 2,	Water Quality Summary Map for June 9, 2000;
Figure 3,	Dissolved Oxygen Distribution Map for May 18 and June 9, 2000;
Charts 1 & 2,	Ground Water Levels vs. Time;
Charts 3 & 4,	BTEX Water Quality vs. Time;
Charts 5 & 6,	MTBE Water Quality vs. Time;
Appendix A,	Water Quality Laboratory Reports for June 9, 2000.

Ground water elevation and product thickness data collected since June 1999 are presented on **Table 1**, and historic data are graphically depicted on **Charts 1 & 2**. Free phase product greater than the capacity of a "Soakease" absorbent bailer has not been detected in any of the monitor wells since September 16, 1997. However, approximately 1 pint of free phase product was recovered from MW-17 in the past six months with "Soakease" absorbent bailers. Ground water levels remained relatively stable across the site between January 3 and June 8, 2000. A Ground Water Contour Map for data collected on June 9, 2000 (sparging system off) is presented as **Figure 1**. Ground water continues to flow in a general south/southeasterly direction across the site.

On January 3, February 23, May 18, and June 9, 2000, LAG assayed the headspace of the monitor and sparge wells with a photoionization detector (PID) to determine the degree of vadose zone contamination present beneath the site. During the February 23, and June 9, 2000 site visits, LAG also assayed the headspace of the two manholes (MH-1 and MH-2) associated with the site. PID data collected over the past year is presented on **Table 2**. Review of the data indicated that readings ranged between background (BG) and 797 parts per million (ppm) in wells MW-9, 16, 17, 23, SW-1, 2, and 3 since January 3, 2000. The remaining wells and two manholes all assayed at BG over the same time period.

With the exception of MW-19 (dry), ground water quality samples were collected from all monitor wells and the three recovery wells on June 9, 2000. The samples were analyzed for dissolved phase petroleum related volatile organic compounds (VOCs) via EPA Method 8260M at Green Mountain Laboratories, Inc. in Middlesex, Vermont. Water quality data collected at the site since May 1998 are summarized and presented on **Table 3**, and the most recent laboratory report is included as **Appendix A**. **Charts 3 - 6** present historic BTEX and MTBE concentrations over time, and the spatial distribution of the June 9, 2000 water quality data are shown on **Figure 2**. In general, the figure shows that the highest concentrations of dissolved phase benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl-tert-butyl-ether (MTBE) continue to exist immediately downgradient of the active product dispenser islands. A summary of the June 9, 2000 water quality results is presented below:

- **Upgradient and Sidegradient of Sparge Trench**: No dissolved hydrocarbons were detected in GM-2. Only benzene [1.8 parts per billion (ppb)] and MTBE (16 ppb) were quantified above method detection limits in MW-22. MTBE was quantified in MW-18 above State of Vermont, Ground Water Quality Enforcement Standards (GQES). The following petroleum related compounds were present in MW-17 above the GQES: benzene, toluene, ethylbenzene, 1,3,5-trimethylbenzene (TMB), 1,2,4-TMB, and MTBE.

- **Sparge Trench**: No dissolved phase petroleum compounds were present in RW-3 above method detection limits.

- **Downgradient of Sparge Trench**: MTBE concentrations declined in MW-2 (130 ppb to 50 ppb) and the Spring (69 ppb to 20 ppb), when compared to December 1999 data. Total BTEX concentrations declined in RW-1 (362 ppb to non-detect) over the same time period. Various petroleum related compounds continue to exceed the GQES in monitor wells MW-9, MW-16, and MW-23 (located on the Paulin Gulf property). As shown on **Chart 6**, MTBE levels in MW-2 continue to decline, but remain above the GQES (40 ppb). The June 9th

data shows that MTBE levels in the Spring have declined below the GQES.

The contaminant distribution shown on **Figure 2** continues to suggest that the intermittent operation of the sparge system is effectively preventing further off-site migration of BTEX compounds by enhancing and supplementing natural biodegradation processes.

Treatment System

The sparge system was only operated between April 10 and May 18, 2000 during the past seven months in accordance with the VDEC approved 2000 site schedule. Air flow rates, pressures, and other system operating parameters are presented on **Tables 4** & **5**. Between April 10th and May 18th, the upper sparge line was operated at 2.0 pounds per inch (psi) and a flow rate of 10.3 cubic feet per minute (CFM). The lower sparge line was not operated during this time period.

Dissolved oxygen readings were collected four times over the past six months to elevate the effectiveness of the sparge system at raising dissolved oxygen levels across the site. A summary of the dissolved oxygen monitoring results during intermittent system operation is provided below:

- **Dissolved Oxygen Levels Immediately Following System Shutdown**: Average dissolved oxygen levels in January 2000 - 2.53 mg/L, range - 0.25 to 9.77 mg/L. Average dissolved oxygen levels in May 2000 - 1.68 mg/L, range - 0.24 to 8.76 mg/L.

- **Dissolved Oxygen Levels During System Shutdown Periods**: Average dissolved oxygen levels in February 2000 - 1.22 mg/L, range - 0.24 to 2.29 mg/L. Average dissolved oxygen levels in June 2000 - 0.68 mg/L, range - 0.12 to 1.25 mg/L.

Review of the data indicate that dissolved oxygen levels across the site range from 0.24 to 9.77 mg/L immediately following sparge system shutdown. After the system was off for at least a month, dissolved oxygen levels declined suggesting that operation of the sparge system increased dissolved oxygen concentrations.

The May 18th and June 9th dissolved oxygen data are summarized on **Figure 3**. The data indicate that dissolved oxygen levels ranged between 0.24 and 8.76 mg/L on May 18th, and between 0.12 and 1.25 mg/L on June 9th. As shown on **Figure 3**, the sparge system appears to be effectively raising dissolved oxygen levels in the immediate area of the sparge trench.

Based on cumulative data collected at the site, LAG recommends continuing with the VDEC approved 2000 site monitoring and ground water sampling schedule (**Table 7**). In this regard, the sparge system will remain shutdown for the rest of year 2000 to help determine whether naturally occurring biodegradation processes are capable of preventing off-site migration. If site monitoring and water quality data continue to suggest stable to declining dissolved phase contaminant concentration trends and no significant off-site migration is occurring, the system will be permanently shutdown to allow natural attenuation/intrinsic bioremediation to complete the reduction of residual contamination beneath the site.

If you have any questions or concerns with regard to this matter, please do not hesitate to call me or Bill Norland, LAG Senior Project Manager, at (800) 477-4384.

Sincerely,
Lincoln Applied Geology, Inc.

Jason S. Barnard
Geologist

Reviewed and Approved by:

William D. Norland
Senior Project Manager

JSB/njp

Enclosures

cc: Richard Spiese, VDEC
Ed Collard
Rob Woolmington
Toni Clark
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Project: Paulin Gulf
Location: North Bennington, Vermont

Table 1
Site # 87-0042
Sheet 1 of 1

Ground Water Elevation/Product Thickness (feet)

Data Point	TOC	6-23-99	8-2-99	9-9-99	10-6-99	12-7-99	1-3-00	2-23-00	5-18-00	6-9-00
MW-2	96.66	86.79	86.75	86.83	86.87	86.94	86.88	86.89	86.77	86.81
MW-9	102.48	94.12	94.28	94.14	95.04	95.14	94.83	94.26	95.06	95.18
MW-16	101.50	93.11	93.38	93.43	94.67	94.61	94.02	93.63	94.61	94.75
MW-17	104.24	92.74	92.93	92.97	93.79	91.92	93.38	93.17	94.01	94.04
MW-18	103.92	93.43	93.76	93.73	94.99	94.92	94.30	93.98	95.02	95.19
MW-19	95.45	<89.35	<89.32							
MW-22	105.12	95.34	95.42	95.22	96.16	95.89	94.07	94.94	96.70	96.62
MW-23	102.58	93.23	94.24	94.19	95.00	95.08	93.98	93.76	94.80	94.83
RW-1	104.78	92.13				94.43				94.68
RW-2	101.84	96.49			94.27	94.84				93.99
RW-3	103.54	93.39				94.74				94.14
Spring	100.95	91.75								93.45
GM-2	104.54	97.14				97.51			97.95	97.84
SW-1	103.40	93.36	<93.40	93.63	94.89	94.83	94.07	93.88	95.13	95.05
SW-2	102.88	93.38	93.69	93.80	94.97	94.86	94.08	93.90	95.04	94.81
SW-3	103.34	93.44	93.75	93.71	94.93	95.14	94.16	93.93	95.06	94.78

NOTES:
Elevation datum assumed to provide reference elevations from the top of PVC well casings (TOC)
Light Grey - Dry
Dark Grey - Inaccessible

Project: Paulin Gulf
Location: North Bennington, Vermont

Table 2
Site # 87-0042
Sheet 1 of 1

Photoionization Results (PID - ppm)

Data Point	6-23-99	8-2-99	9-9-99	10-6-99	12-7-99	1-3-00	2-23-00	5-18-00	6-9-00
MW-2	BG	BG	BG	BG	BG	BG	BG	BG	BG
MW-9	BG	BG	BG	BG	BG	BG	2.3	BG	BG
MW-16	BG	BG	BG	BG	BG	BG	797	BG	BG
MW-17	246	25	48	73	37	91	84	8.6	BG
MW-18	BG	BG	BG	BG	BG	BG	BG	BG	BG
MW-19	BG	BG	BG		BG		BG	BG	BG
MW-22	BG	BG	BG	BG	BG	BG	BG	BG	BG
MW-23	BG	0.8	BG	BG	4.8	3.0	BG	BG	13.6
RW-1	BG				BG				BG
RW-2	BG			BG	BG				BG
RW-3	BG				BG				BG
Spring	BG				BG				BG
GM-2	BG				BG			BG	BG
SW-1	BG	BG	BG	BG	BG	4.1	BG	BG	BG
SW-2	BG	0.4	BG	BG	BG	2.7	3.5	BG	BG
SW-3	105	BG	BG	BG	14.7	12.7	BG	BG	BG
MH-1							BG		BG
MH-2							BG		BG

NOTES:
BG - Background
SL - Saturated Lamp
Shaded - Inaccessible
Blank - No data obtained

Project: Paulin Gulf
Location: North Bennington, Vermont

Table 3
Site # 87-0042
Sheet 1 of 2

Ground Water Quality Results (ppb)

Data Point	Compound	*GQES	5-13-98	8-12-98	11-12-98	2-17-99	6-23-99	12-7-99	6-9-00
	Benzene	5	<2	<1	<2	<5	<5	<5	<2
	Toluene	1,000	<2	<1	<2	<5	<5	<5	<2
	Ethylbenzene	700	<2	<1	<2	<5	<5	<5	<2
	Xylenes	10,000	<6	<3	<6	<15	<15	<15	<6
	1,3,5-Trimethylbenzene	4						<10	<4
	1,2,4-Trimethylbenzene	5						<10	<4
	Naphthalene	20						<25	<10
	MTBE	40	170	120	140	150	130	130	50
MW-2	BTEX		<12	<6	<12	<30	<30	<30	<12
	Benzene	5	<100	27	<5	15	<10	<10	12
	Toluene	1,000	<100	98	<5	32	<10	<10	3.8
	Ethylbenzene	700	<100	160	<5	99	39	<10	42
	Xylenes	10,000	490	990	32	530	120	36	71
	1,3,5-Trimethylbenzene	4						<20	3.4
	1,2,4-Trimethylbenzene	5						50	68
	Naphthalene	20						81	25
	MTBE	40	<500	180	<25	15	<50	<50	<5
MW-9	BTEX		790	1,275	47	676	179	66	129
	Benzene	5	5,200	3,800	1,400	2,000	3,000	3,500	3,900
	Toluene	1,000	2,200	630	87	590	420	670	1,800
	Ethylbenzene	700	1,500	1,200	740	660	730	1,100	1,400
	Xylenes	10,000	2,700	1,900	1,000	1,100	960	1,900	2,900
	1,3,5-Trimethylbenzene	4						240	260
	1,2,4-Trimethylbenzene	5						730	850
	Naphthalene	20						130	210
	MTBE	40	4,500	3,800	1,500	2,300	4,500	2,700	3,900
MW-16	BTEX		11,600	7,530	3,227	4,350	5,110	7,170	10,000
	Benzene	5	4,400	3,800	3,600	3,700	5,500	3,400	2,500
	Toluene	1,000	5,500	5,200	4,100	3,400	5,800	2,400	1,800
	Ethylbenzene	700	1,200	1,600	1,200	870	1,900	790	720
	Xylenes	10,000	8,200	10,000	9,200	7,900	10,000	6,800	3,600
	1,3,5-Trimethylbenzene	4						3,300	610
	1,2,4-Trimethylbenzene	5						7,100	1,300
	Naphthalene	20						2,300	<1,000
	MTBE	40	12,000	15,000	15,000	14,000	21,000	9,300	4,600
MW-17	BTEX		19,300	20,600	18,100	15,870	23,200	13,390	8,620
	Benzene	5	<1	<2	<1	<1	28	<5	<2
	Toluene	1,000	<1	<2	<1	<1	<5	<5	<2
	Ethylbenzene	700	<1	<2	<1	<1	5.4	<5	<2
	Xylenes	10,000	<3	<6	<3	<3	<15	<15	<6
	1,3,5-Trimethylbenzene	4						<10	<4
	1,2,4-Trimethylbenzene	5						<10	<4
	Naphthalene	20						41	<10
	MTBE	40	240	24	19	340	140	93	110
MW-18	BTEX		<6	<12	<6	<6	53.4	<30	<12
	Benzene	5	7.7	6.5	6	2.8	8	<1	1.8
	Toluene	1,000	<1	<1	<2	<2	<1	<1	<1
	Ethylbenzene	700	<1	<1	<2	<2	<1	<1	<1
	Xylenes	10,000	<3	<3	<6	<6	<3	<3	<3
	1,3,5-Trimethylbenzene	4						<2	<2
	1,2,4-Trimethylbenzene	5						<2	<2
	Naphthalene	20						<5	<5
	MTBE	40	130	150	110	82	120	48	16
MW-22	BTEX		12.7	11.5	16	12.8	13	<6	6.8
	Benzene	5	3,700	3,100	1,700	720	1,500	1,500	1,700
	Toluene	1,000	8,600	5,300	2,100	660	1,800	360	670
	Ethylbenzene	700	1,500	1,300	860	570	1,100	810	980
	Xylenes	10,000	7,700	9,500	6,200	4,300	5,700	5,200	5,300
	1,3,5-Trimethylbenzene	4						880	810
	1,2,4-Trimethylbenzene	5						2,600	2,400
	Naphthalene	20						<250	<250
	MTBE	40	8,400	7,900	3,700	1,500	4,200	2,600	4,400
MW-23	BTEX		21,500	19,200	10,860	6,250	10,100	7,870	8,650

NOTES:
MTBE in upper right corner of cell
BTEX in lower left corner of cell
< - Contaminant not detected at specified detection limit
Light grey cell = compound exceeds State of Vermont, GQES

Project: Paulin Gulf
Location: North Bennington, Vermont

Table 3
Site # 87-0042
Sheet 2 of 2

Ground Water Quality Results (ppb)

Data Point	Compound	*GQES	5-13-98	8-12-98	11-12-98	2-17-99	6-23-99	12-7-99	6-9-00
	Benzene	5	<1	3.5	7.2	2.6	24	<10	<1
	Toluene	1,000	<1	2.4	12	1.2	29	11	<1
	Ethylbenzene	700	<1	5.4	24	<1	55	61	<1
	Xylenes	10,000	<3	29	150	100	670	280	<3
	1,3,5-Trimethylbenzene	4						<20	<2
	1,2,4-Trimethylbenzene	5						220	<2
	Naphthalene	20						<50	<5
	MTBE	40	<5	8.7	27	33	75	<50	<5
RW-1	BTEX		<6	40.3	193.2	104.8	778	362	<6
	Benzene	5	590	620	410	470	980	41	1.8
	Toluene	1,000	230	280	200	380	240	<10	<1
	Ethylbenzene	700	80	160	160	100	200	<10	<1
	Xylenes	10,000	1,100	1,400	1,500	1,300	1,600	410	8
	1,3,5-Trimethylbenzene	4						55	<2
	1,2,4-Trimethylbenzene	5						110	3.3
	Naphthalene	20						<50	<5
	MTBE	40	470	460	490	400	1,000	<50	<5
RW-2	BTEX		2,000	2,460	2,270	2,250	3,020	471	12
	Benzene	5	<1	<1	<1	<1	<1	<1	<1
	Toluene	1,000	1.5	<1	<1	<1	<1	<1	<1
	Ethylbenzene	700	<1	<1	<1	<1	<1	<1	<1
	Xylenes	10,000	<3	<3	<3	<3	<3	<3	<3
	1,3,5-Trimethylbenzene	4						<2	<2
	1,2,4-Trimethylbenzene	5						<2	<2
	Naphthalene	20						<5	<5
	MTBE	40	<5	<5	<5	13	5.7	<5	<5
RW-3	BTEX		6.5	<6	<6	<6	<6	<6	<6
	Benzene	71	<1	<1	<1	<1	<1	<1	<1
	Toluene	200,000	<1	<1	<1	<1	<1	<1	<1
	Ethylbenzene	29000	<1	<1	<1	<1	<1	<1	<1
	Xylenes		<3	<3	<3	<3	<3	<3	<3
	1,3,5-Trimethylbenzene							<2	<2
	1,2,4-Trimethylbenzene							<2	<2
	Naphthalene							<5	<5
	MTBE		60	19	21	200	<5	69	20
Spring	BTEX		<6	<6	<6	<6	<6	<6	<6
	Benzene	5	<1	<1	<1	<1	<1	<1	<1
	Toluene	1,000	<1	<1	<1	<1	<1	<1	<1
	Ethylbenzene	700	<1	<1	<1	<1	<1	<1	<1
	Xylenes	10,000	<3	<3	<3	<3	<3	<3	<3
	1,3,5-Trimethylbenzene	4						<2	<2
	1,2,4-Trimethylbenzene	5						<2	<2
	Naphthalene	20						<5	<5
	MTBE	40	<5	<5	<5	<5	<5	<5	<5
GM-2	BTEX		<6	<6	<6	<6	<6	<6	<6

NOTES:
MTBE in upper right corner of cell
BTEX in lower left corner of cell
< - Contaminant not detected at specified detection limit
Light grey cell = compound exceeds State of Vermont, GQES

Project: Paulin Gulf
Location: N. Bennington, Vermont

Table 4
Site #: 87-0042

Remedial System Operating Pressures

Sparge System Pressures (psi)	1-5-99	2-17-99	3-9-99	3-26-99 (1)	7-9-99 (2)	8-2-99 (1)	10-27-99 (2)	11-18-99	12-7-99	1-3-00 (1)	4-11-00 (2)	5-18-00 (1)
Total Sparge	2.0	1.5	2.5	0.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0
Upper Line	0.0	2.2	0.0	0.0	0.0	0.0	0.0	2.4	2.4	0.0	2.4	0.0
Lower Line	2.5	0.0	2.4	0.0	1.8	0.0	1.8	0.0	0.0	0.0	0.0	0.0

NOTES:
(1) = Sparge System Staged Shutdown
(2) = Sparge System Restarted
PSI = Pounds per square inch

Project: Paulin Gulf
Location: N. Bennington, VT

Table 6
Site # 87-0042
Sheet 1 of 1

Dissolved Oxygen and Temperature Readings

Data Point	8-2-99	9-9-99	10-6-99	12-7-99	1-3-00	2-23-00	5-18-00	6-8-00
Temperature (celsius)								
MW-2	15.3°	15.3°	14.2°	12.3°		8.8°		13.8°
MW-9	16.9°	16.9°	16.2°	12.2°		7.9°		14.2°
MW-16	17.4°	17.6°	18.7°	13.8°		8.8°		14.6°
MW-17	15°	14.7°	14.3°	12.7°		7.2°		13.9°
MW-18	16.8°	17°	17.9°	14.5°		7.9°		14.8°
MW-19								
MW-22	18°	17.4°	17.4°	14.1°		8.7°		15.2°
MW-23	17.8°	16.8°	17.6°	13.4°		8.8°		14.8°
RW-1				12.8°				14.4°
RW-2				12.9°				14.8°
RW-3				12.6°				13.6°
Spring								14.2°
GM-2				15.2°				13.8°
SW-1		16.4°	16.7°	10.4°		8.3°		14.2°
SW-2	17.8°	17.1°	17°	10.6°		8.5°		14.6°
SW-3	17.5°	17.3°	18°	10.4°		8°		14°
Dissolved Oxygen (mg/L)								
MW-2	1.33	0.20	0.20	0.20	2.53	2.29	0.37	1.25
MW-9	0.39	0.20	0.25	0.26	0.28	1.32	0.27	0.65
MW-16	0.18	0.16	0.14	0.21	3.87	0.38	0.24	0.20
MW-17	0.13	0.14	0.16	0.18	0.25	0.24	0.26	0.12
MW-18	1.45	1.11	0.18	0.73	2.17	1.00	1.24	1.06
MW-19								
MW-22	0.36	0.16	0.17	0.19	2.80	1.03	1.45	0.50
MW-23	0.41	0.24	0.20	0.21	0.28	0.78	0.27	0.38
RW-1				0.34				0.45
RW-2				0.46				0.28
RW-3				0.78				0.56
Spring								1.08
GM-2				1.60			0.36	1.24
SW-1		0.19	0.20	8.26	9.77	2.10	8.76	0.95
SW-2	0.60	0.21	0.19	8.48	2.83	1.53	4.67	0.79
SW-3	0.40	0.17	0.18	8.60	0.54	1.47	0.59	0.65

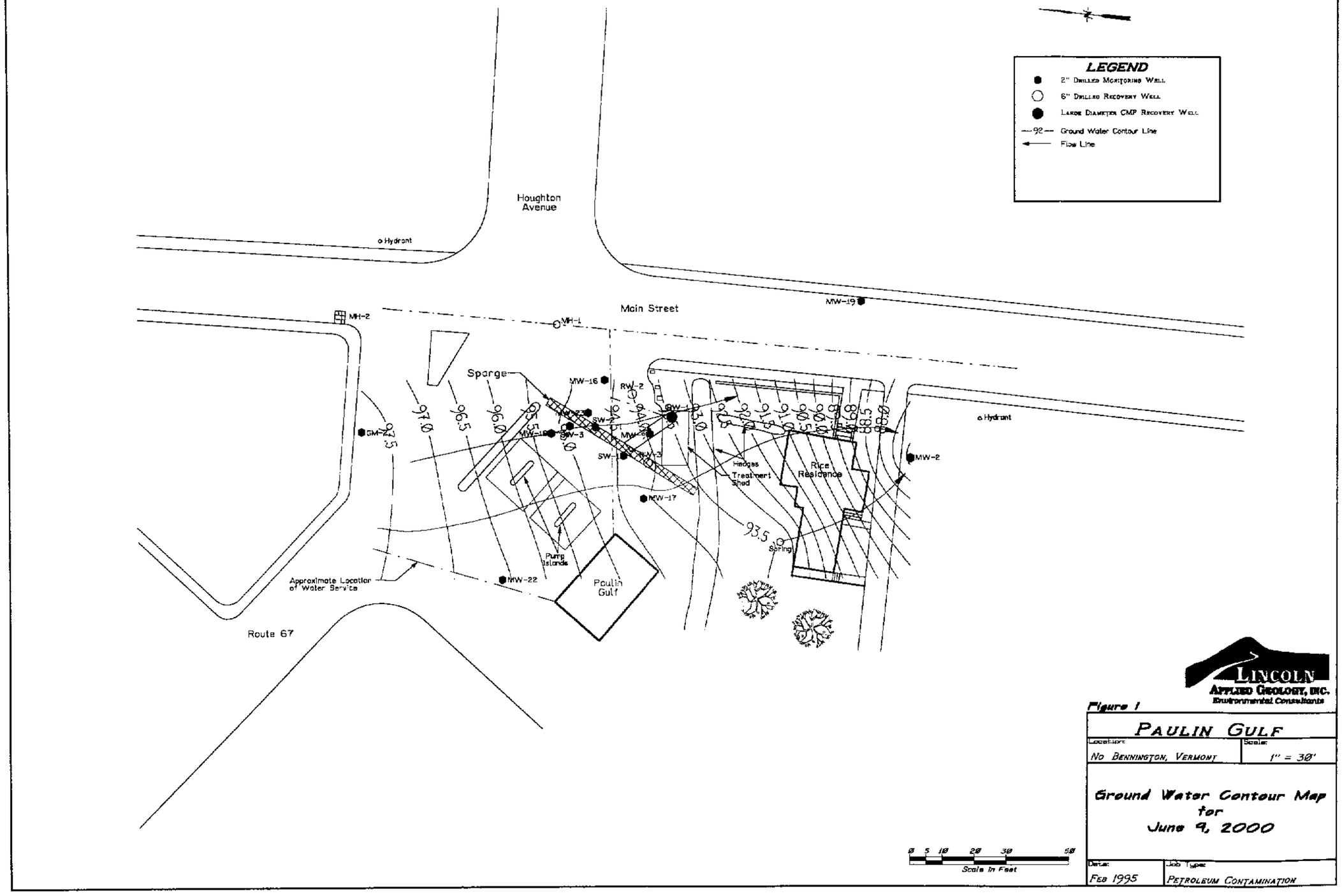
Notes: Light grey cell = Dry

Project: Paulin Gulf
Location: North Bennington, Vermont

Table 7
Site # 87-0042
Sheet 1 of 1

Proposed 2000 System Operation/Site Monitoring Schedule

Month	Week	System Operations	Monitoring (DTW and PID)	Monitoring (D.O.)	Water Quality
Jan. 00	1	Turn Off	MW-2, 9, 16, 17, 18, 22, 23, SW-1, 2, 3	MW-2, 9, 16, 17, 18, 22, 23, SW-1, 2, 3	
	2	OFF			
	3	OFF			
	4	OFF			
Feb. 00	1	OFF			
	2	OFF			
	3	OFF	MW-2, 9, 16, 17, 18, 22, 23, SW-1, 2, 3	MW-2, 9, 16, 17, 18, 22, 23, SW-1, 2, 3	
	4	OFF			
Mar. 00	1	OFF			
	2	OFF			
	3	OFF			
	4	OFF			
Apr. 00	1	OFF			
	2	Turn On	System only		
	3	ON			
	4	ON			
May. 00	1	ON			
	2	Turn Off	MW-2, 9, 16, 17, 18, 22, 23, SW-1, 2, 3	MW-2, 9, 16, 17, 18, 22, 23, SW-1, 2, 3	
	3	OFF			
	4	OFF			
Jun. 00	1	OFF			
	2	OFF			
	3	OFF	All Wells, Spring, and MH	All Wells, Spring, and MH	MW-2, 9, 16, 17, 18, 22, 23, RW-1, 2, 3, Spring, GM-2
	4	OFF			
Jul. 00	1	OFF			
	2	OFF			
	3	OFF			
	4	OFF			
Aug. 00	1	OFF			
	2	OFF			
	3	OFF			
	4	OFF			
Sep. 00	1	OFF			
	2	OFF	All Wells, Spring, and MH	All Wells, Spring, and MH	MW-2, 9, 16, 17, 18, 22, 23, RW-1, 2, 3, Spring, GM-2
	3	OFF			
	4	OFF			
Oct. 00	1	OFF			
	2	OFF			
	3	OFF			
	4	OFF			
Nov. 00	1	OFF			
	2	OFF			
	3	OFF			
	4	OFF			
Dec. 00	1	OFF	All Wells, Spring, and MH	All Wells, Spring, and MH	MW-2, 9, 16, 17, 18, 22, 23, RW-1, 2, 3, Spring, GM-2
	2	OFF			
	3	OFF			
	4	OFF			



LINCOLN APPLIED GEOLOGY, INC.
Environmental Consultants

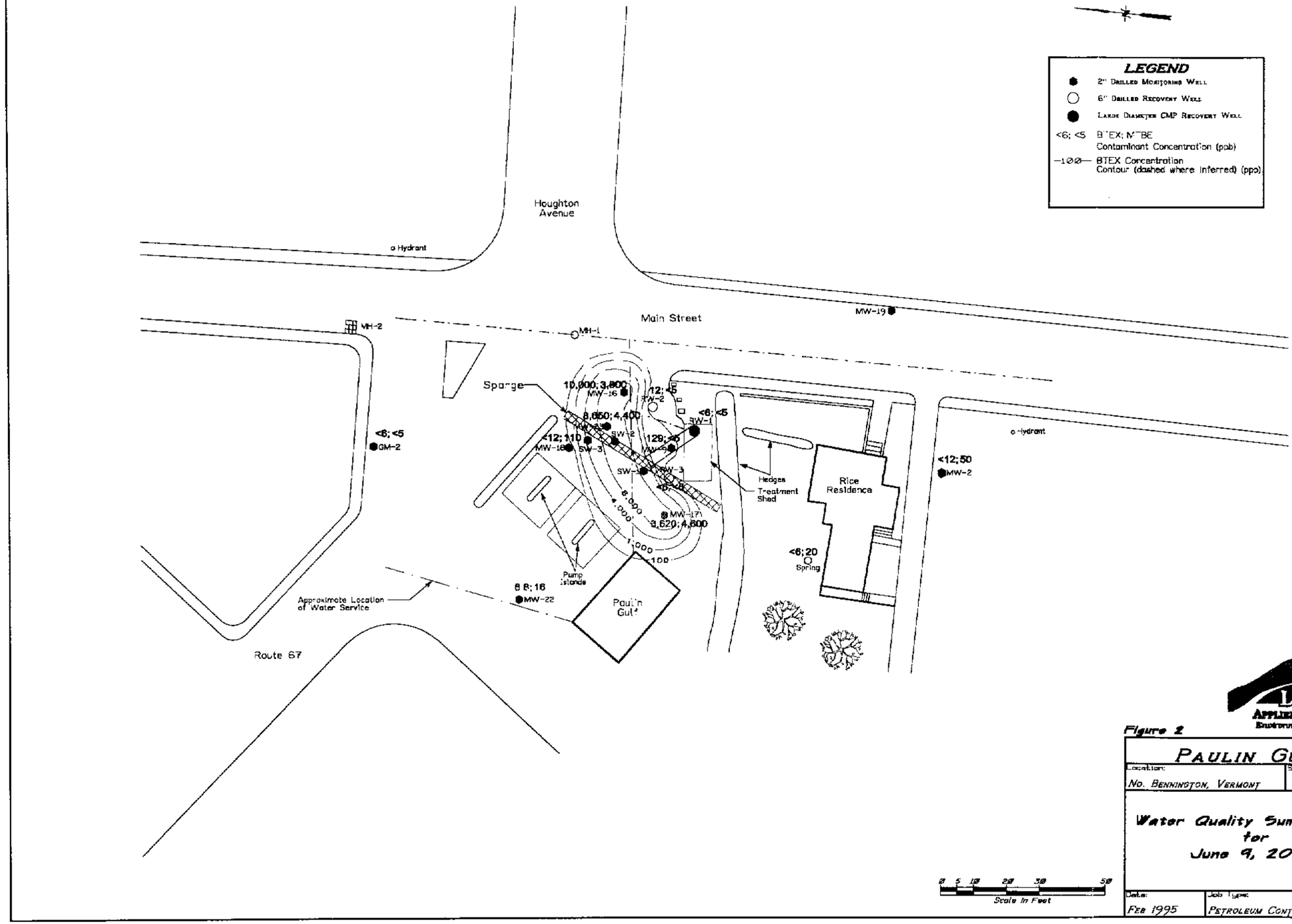
Figure 1

PAULIN GULF

Location:	Scale:
NO BENNINGTON, VERMONT	1" = 30'

Ground Water Contour Map for June 9, 2000

Date:	Job Type:
FEB 1995	PETROLEUM CONTAMINATION



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Environmental Consultants

Figure 2

PAULIN GULF

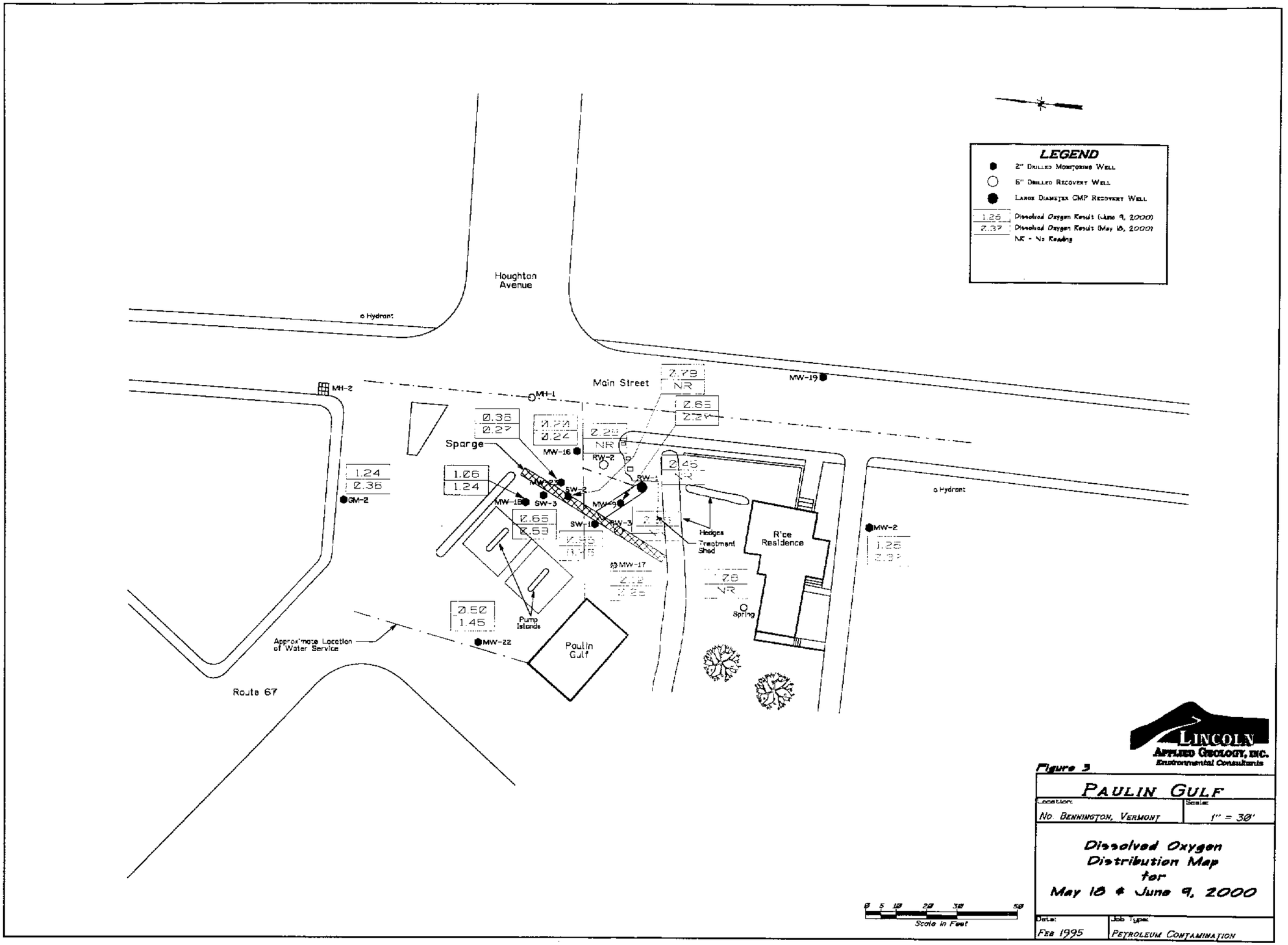
Location: No. Bennington, Vermont

Scale: 1" = 30'

Water Quality Summary Map
for
June 9, 2000

Date: Feb 1995

Job Type: Petroleum Contamination


LEGEND
2" Drilled Monitoring Well
6" Drilled Recovery Well
Large Diameter CMP Recovery Well
1.25 Dissolved Oxygen Result (June 9, 2000)
2.37 Dissolved Oxygen Result (May 10, 2000)
NR - No Reading
Houghton Avenue
o Hydrant
MH-2
MH-1
Main Street
MW-19
2.78
NR
2.65
2.29
0.38
0.27
0.20
0.24
2.28
NR
Sparge
MW-16
RW-2
2.45
1.24
0.36
GM-2
1.06
1.24
SW-2
MW-15
SW-3
MW-5
RW-1
0.65
0.53
SW-1
RW-3
MW-17
Hedges Treatment Shed
Rice Residence
MW-2
1.25
2.37
.78
NR
Spring
0.50
1.45
Pump Islands
MW-22
Approximate Location of Water Service
Paulin Gulf
Route 67
0 5 10 20 30 50
Scale in Feet
LINCOLN APPLIED GEOLOGY, INC.
Environmental Consultants
Figure 3
PAULIN GULF
Location: No. Bennington, Vermont
Scale: 1" = 30'
Dissolved Oxygen Distribution Map for May 10 & June 9, 2000
Date: Feb 1995
Job Type: Petroleum Contamination

Paulin Gulf
Ground Water Levels vs. Time

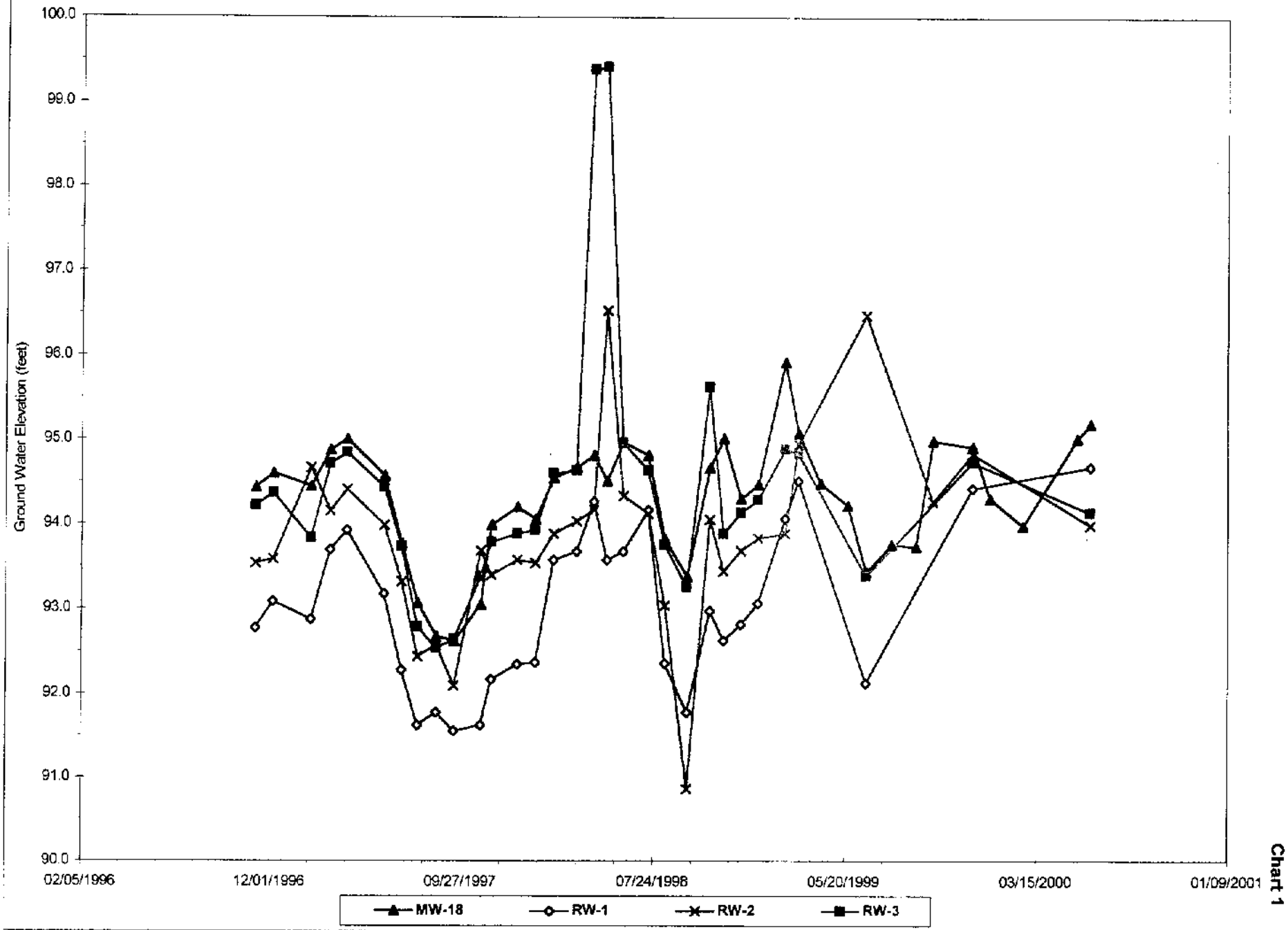


Chart 1

Paulin Gulf
Ground Water Levels vs. Time

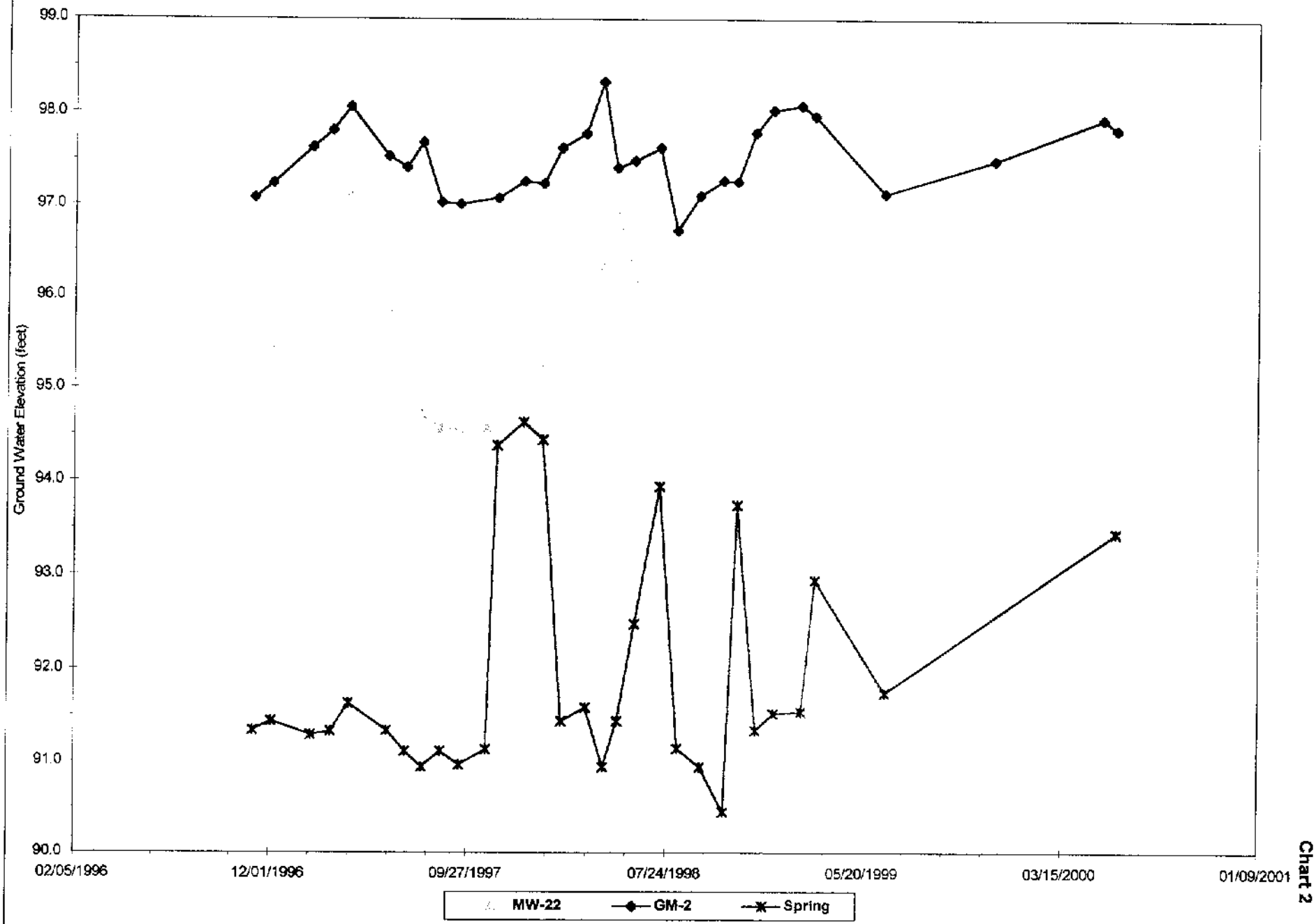


Chart 2

Paulin Gulf
Ground Water Quality vs. Time
MW-9, 16, 17, and 18 BTEX

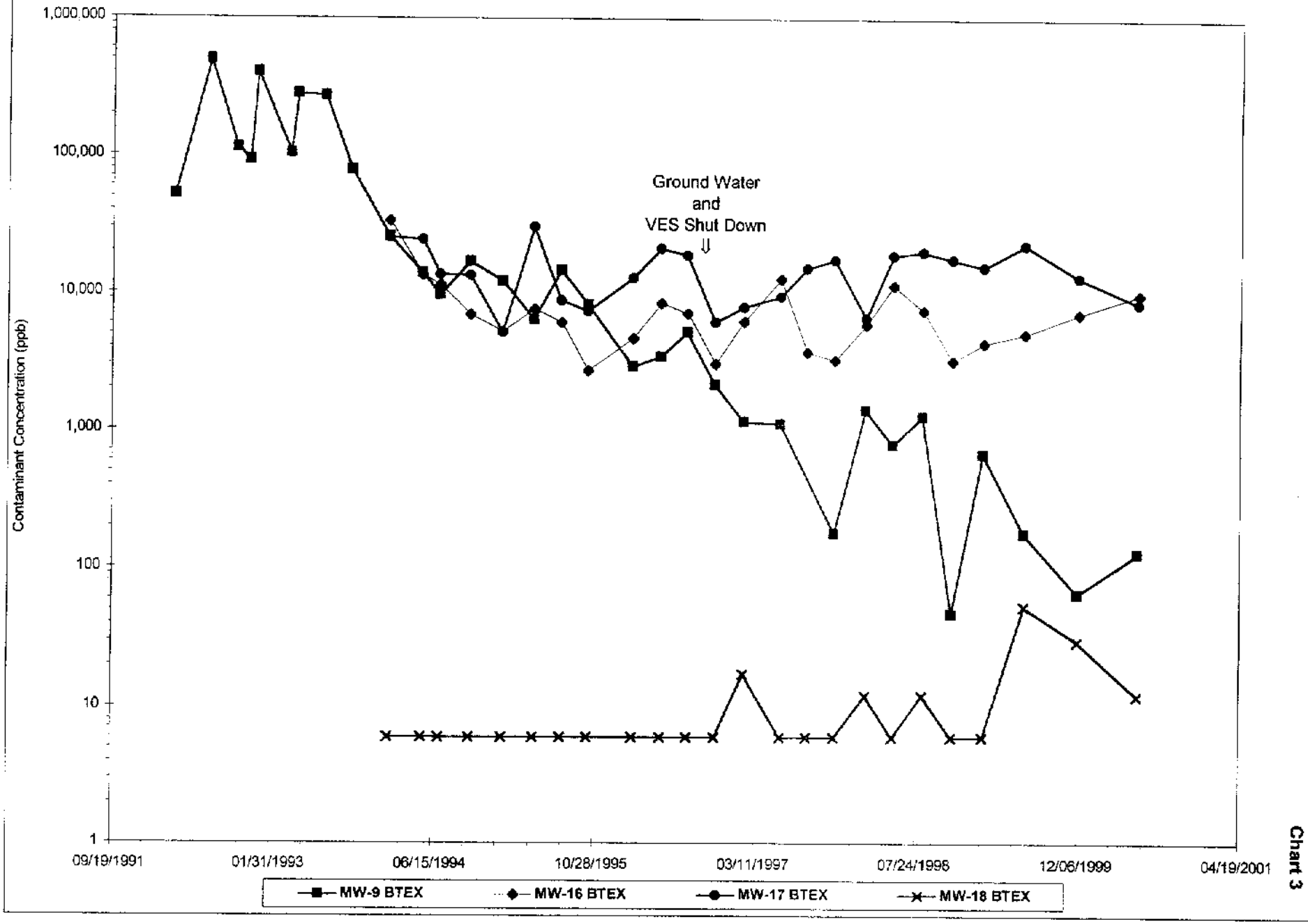


Chart 3

Paulin Gulf
Ground Water Quality vs. Time
MW-2, 23, and Spring BTEX

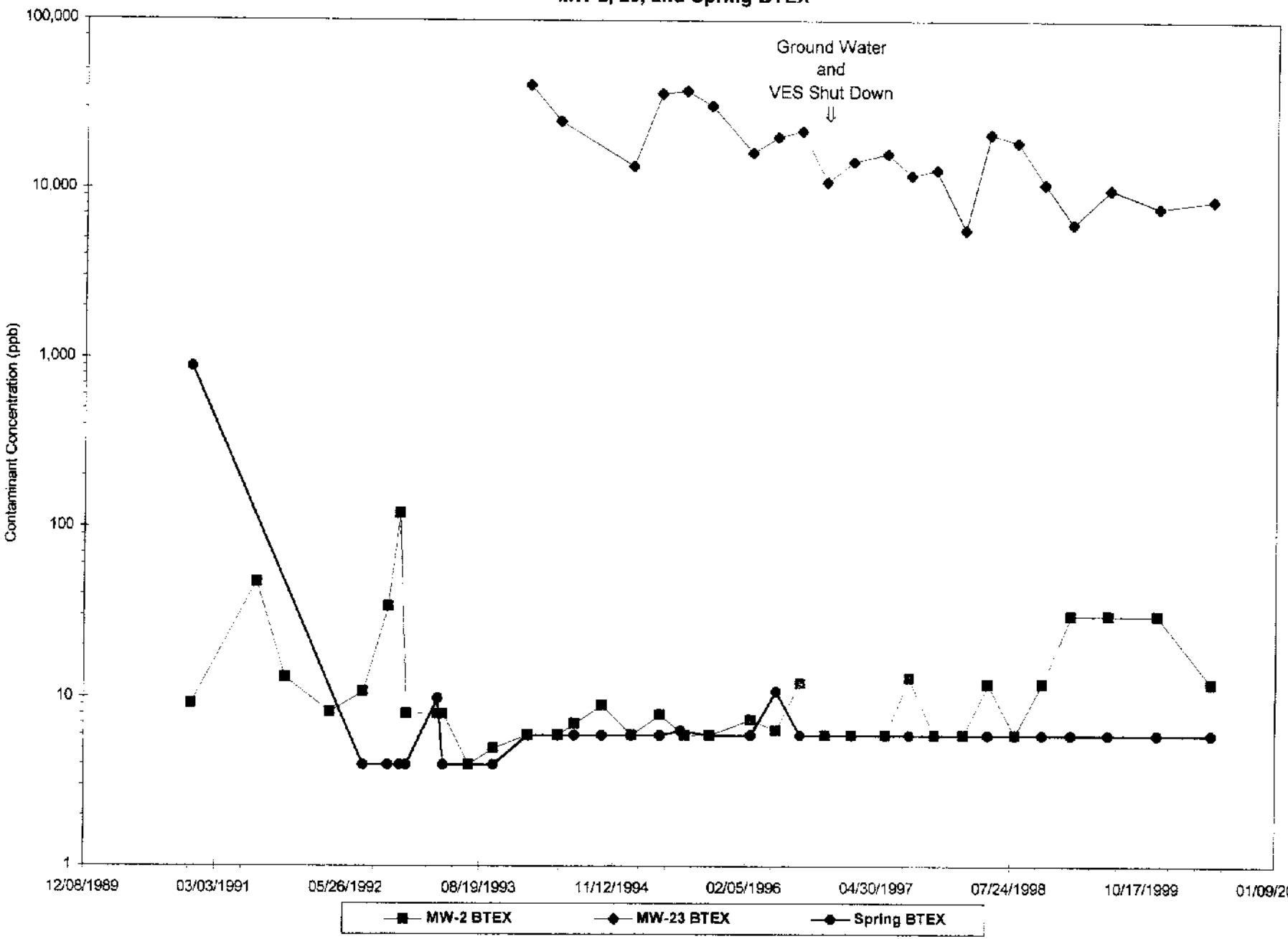


Chart 4

Paulin Gulf
Ground Water Quality vs. Time
MW-9, 16, 17, and 18 MTBE

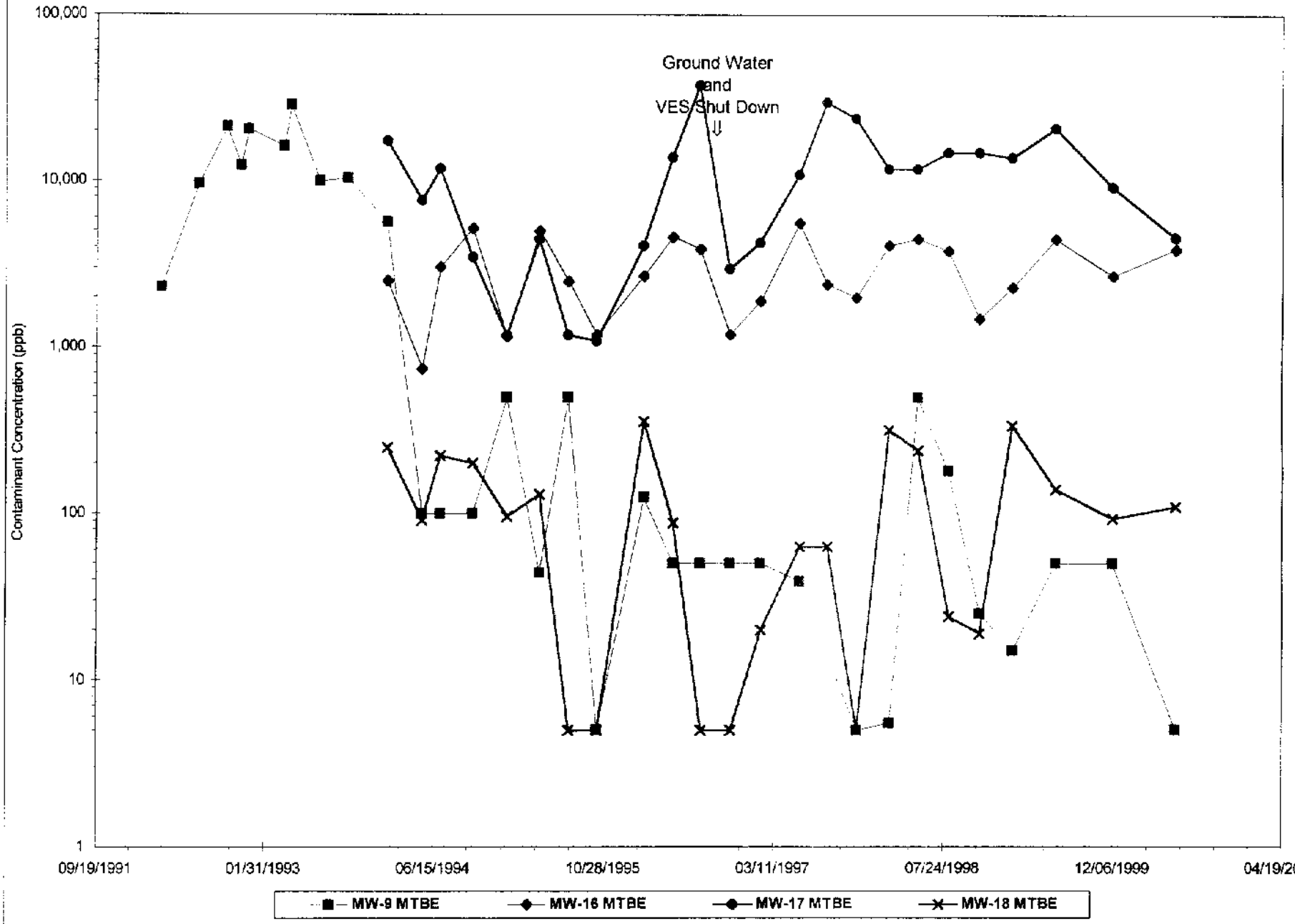


Chart 5

Paulin Gulf
Ground Water Quality vs. Time
MW-2, 23, and Spring MTBE

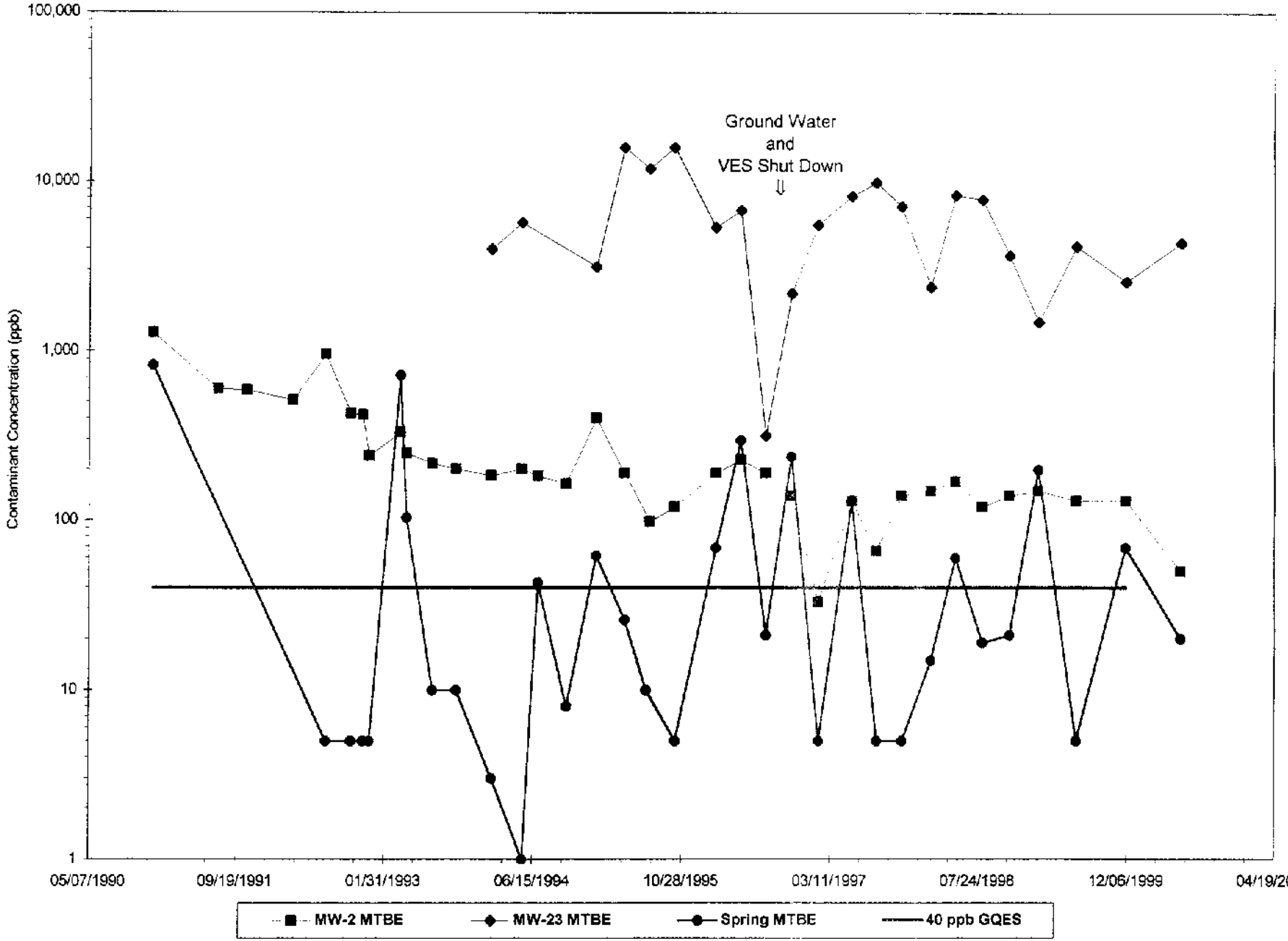


Chart 6

Appendix A

Water Quality Laboratory Reports for June 9, 2000

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

CLIENT NAME:	Lincoln Applied Geology	REFERENCE NO.:	6390
ADDRESS:	163 Revell Drive	PROJECT NO.:	NA
	Lincoln, VT 05443	DATE OF SAMPLE:	6/9/00
SAMPLE LOCATION:	Paulin Gulf	DATE OF RECEIPT:	6/13/00
SAMPLER.	Jeremy Revell	DATE OF ANALYSIS:	6/13/00 - 6/23/00
ATTENTION:	Jon Ashley	DATE OF REPORT:	6/26/00

Pertaining to the analyses of specimens submitted under the accompanying chain of custody form, please note the following:

- Water samples submitted for VOC analysis were preserved with HCl. The trip blank was prepared by the client with reagent water supplied by the laboratory.
- Specimens were processed and examined according to the procedures outlined in the specified method.
- Holding times were honored.
- Instruments were appropriately tuned and calibrations were checked with the frequencies required in the specified method.
- Blank contamination was not observed at levels interfering with the analytical results.
- Continuing Calibration standards were monitored at intervals indicated in the specified method. The resulting analytical precision and accuracy were determined to be within method QA/QC acceptance limits.
- The efficiency of analyte recovery for individual samples was monitored by the addition of surrogate analyte to all samples, standards, and blanks. Surrogate recoveries were found to be within laboratory QA/QC acceptance limits, unless noted otherwise.

Reviewed by:

Raul Sanchez
Chemical Services

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: MW - 2
ANALYSIS DATE: 06/14/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	2	ND
Toluene	2	ND
Ethylbenzene	2	ND
1,3,5-Trimethylbenzene	4	ND
1,2,4-Trimethylbenzene	4	ND
Xylenes	6	ND
Naphthalene	10	ND
MTBE	10	50

Surrogate % Recovery: 97.3 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: MW - 9
ANALYSIS DATE: 06/14/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	1	12
Toluene	1	3.8
Ethylbenzene	1	42
1,3,5-Trimethylbenzene	2	3.4
1,2,4-Trimethylbenzene	2	68
Xylenes	3	71
Naphthalene	5	25
MTBE	5	ND

Surrogate % Recovery: 100 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: MW - 16
ANALYSIS DATE: 06/13/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	25	3900
Toluene	25	1800
Ethylbenzene	25	1400
1,3,5-Trimethylbenzene	50	260
1,2,4-Trimethylbenzene	50	850
Xylenes	75	2900
Naphthalene	125	210
MTBE	125	3900

Surrogate % Recovery: 103 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

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LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: MW - 17
ANALYSIS DATE: 06/13/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	200	2500
Toluene	200	1800
Ethylbenzene	200	720
1,3,5-Trimethylbenzene	400	610
1,2,4-Trimethylbenzene	400	1300
Xylenes	600	3600
Naphthalene	1000	ND
MTBE	1000	4600

Surrogate % Recovery: 101 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: MW - 18
ANALYSIS DATE: 06/13/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	2	ND
Toluene	2	ND
Ethylbenzene	2	ND
1,3,5-Trimethylbenzene	4	ND
1,2,4-Trimethylbenzene	4	ND
Xylenes	6	ND
Naphthalene	10	ND
MTBE	10	110

Surrogate % Recovery: 97.3 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: MW - 22
ANALYSIS DATE: 06/13/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	1	1.8
Toluene	1	ND
Ethylbenzene	1	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Xylenes	3	ND
Naphthalene	5	ND
MTBE	5	16

Surrogate % Recovery: 97 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: MW - 23
ANALYSIS DATE: 06/13/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	50	1700
Toluene	50	670
Ethylbenzene	50	980
1,3,5-Trimethylbenzene	100	810
1,2,4-Trimethylbenzene	100	2400
Xylenes	150	5300
Naphthalene	250	ND
MTBE	250	4400

Surrogate % Recovery: 102 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

ENTERED

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: RW - 1
ANALYSIS DATE: 06/23/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	1	ND
Toluene	1	ND
Ethylbenzene	1	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Xylenes	3	ND
Naphthalene	5	ND
MTBE	5	ND

Surrogate % Recovery: 65.6 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: RW - 2
ANALYSIS DATE: 06/22/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	1	1.8
Toluene	1	ND
Ethylbenzene	1	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	3.3
Xylenes	3	8
Naphthalene	5	ND
MTBE	5	BPQL

Surrogate % Recovery: 99.1 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: RW - 3
ANALYSIS DATE: 06/13/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	1	ND
Toluene	1	ND
Ethylbenzene	1	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Xylenes	3	ND
Naphthalene	5	ND
MTBE	5	ND

Surrogate % Recovery: 98.4 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

GREEN MOUNTAIN LABORATORIES, INC.

27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: GM - 2
ANALYSIS DATE: 06/13/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	1	ND
Toluene	1	ND
Ethylbenzene	1	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Xylenes	3	ND
Naphthalene	5	ND
MTBE	5	ND

Surrogate % Recovery: 98.2 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

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27 Cross Road
Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: SPRING
ANALYSIS DATE: 06/14/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	1	ND
Toluene	1	ND
Ethylbenzene	1	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Xylenes	3	ND
Naphthalene	5	ND
MTBE	5	20

Surrogate % Recovery: 98.3 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

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Middlesex, Vermont 05602

Phone (802) 223-1468 Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - 8260M

GML REF. # : 6390
SAMPLE ID: TRIP BLANK
ANALYSIS DATE: 06/13/2000
SAMPLE DATE: 06/09/2000
SAMPLE TYPE: WATER

PARAMETER	PQL (ug/L)	RESULT (ug/L)
Benzene	1	ND
Toluene	1	ND
Ethylbenzene	1	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Xylenes	3	ND
Naphthalene	5	ND
MTBE	5	ND

Surrogate % Recovery: 96.4 %

ND = Not Detected
BPQL = Below Practical Quantitation Limit

Green Mountain Laboratories, Inc.

27 Cross Road
Middlesex, Vermont 05602
Phone (802) 223-1468 Fax (802) 223-8688
E-mail: GML@together.net

GML SAMPLE #

Page 1 of 1

GML # 6390

Client Name	Lincoln Applied Geology
Address	163 Revell Dr. Lincoln Vt 05443
Phone / Fax	(802) 453-4384/(802) 453-5399
Project Name	Paulin Golf
Project Number	
Project Manager	Jon Ashley
Sampler	Jeremy Revell

#	Sample Location	Date	Time	# of Cont.	Pres.	Sample Type	Analysis Requested: EPA 8010	Remarks
1	Trip Blank	6/9/00	0800	2	HCl	H_2O	X	
2	MW-17		1355					
3	MW-14		1320					
4	MW-23		1345					
5	MW-16		1340					
6	RW-2		1335					
7	RW-1		1325					
8	RW-3		1250					
9	GM-2		1230					
10	MW-22		1300					
11	MW-8		1255					
12	Spring		1240					
13	MW-9	"	1305	1	"	"	"	

Chain of Custody

Relinquished By:	Date/Time: 6/13/00 0925	Received By:	Date/Time: 0925 6/13/00
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Temperature Blank:	Vial Lot ID #:		